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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,264	10/04/2005	Kimiaki Tsutsui	273634US0PCT	1847

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EXAMINER	
LISTVOYB, GREGORY	
ART UNIT	PAPER NUMBER
1796	

NOTIFICATION DATE	DELIVERY MODE
02/08/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/538,264	TSUTSUI ET AL.	
	Examiner	Art Unit	
	GREGORY LISTVOYB	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 November 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

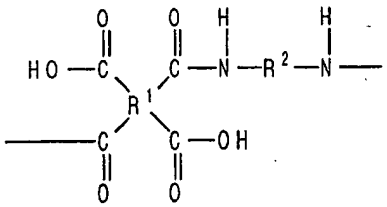
Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-18 rejected under 35 U.S.C. 103 as being unpatentable over Sawahara et al (US 6294639) herein Sawahara in combination with Miyama et al (US patent 6808766) herein Miyama (necessitated by amendment)

Sawahara discloses a liquid crystal aligning agent comprising a polyimide precursor having a structural unit represented by the formula (I) (see Abstract):

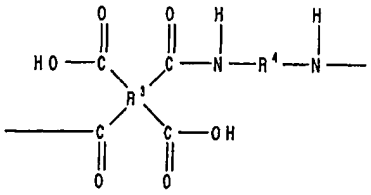


[I]

where RI is a tetravalent organic group constituting a tetracarboxylic acid which has an alicyclic structure, meeting the limitations of Claim 4 (see Abstract) and R2 is a bivalent organic group constituting a diamine.

Sawahara teaches that R1 is bicyclo[3,3,0]octane-2,4,6,8-tetracarboxylic dianhydride (BODA) (see Example 1), which is the same material as uses in the Application.

In addition, Sawahara discloses a polyimide, having formula (VII):



[VII]

where R3 is a tetravalent organic group constituting a tetracarboxylic acid, and R4 is a bivalent organic group constituting a diamine, such as one having repeating CH2 groups in the structure (i.e. 1,2-diaminoethane, 1,3-diaminopropane, 1,4-diaminobutane and 1,6-diaminohexane, see Column 8, line 35)). In reference to Claim 8, Sawahara teaches 100% of aromatic diamine in the polyamide structure (see Example 1)

Sawahara teaches that polyamic acids of structures (I and VII) can be used together in preparation of a liquid crystal aligning agent (see Example 10).

Sawahara does not disclose volume resistivity values for his composition.

However, he discloses a high voltage holding ratio (see Example 10), which depends on a polyamide structure and characterizes electrical resistance of the liquid crystal aligning agent. In Examiner's position, since Sawahara and the Applicant use polyamic acids of similar structure, Sawahara's composition inherently has a volume resistivity values between 10E10 to 10E14 Ohm/cm.

Sawahara does not teach that R2 contains 10-100% of bivalent organic group having a nitrogen atom.

Miyama discloses a liquid crystal aligning agent comprising a polyimide precursor having alicyclic tetracarboxylic acid anhydride (see Example 54) and diamine, containing Nitrogen atom in organic radical (such as diaminodiphenylamine, which used in the Application and meets the limitations of Claim 3, see Column 11, line 40).

Note that Miyama teaches the above diamine in the list of other diamines used. However, it would have been obvious to a person of ordinary skills in the art to choose diaminodiphenylamine as long it is expressly disclosed by Miyama.

Miyama discloses diaminodiphenylamine among other species. It would have been obvious to a person of ordinary skills in the art that virtually any of them can be used in the composition with reasonable expectation of success.

Note that Miyama does not disclose 10-100% of diaminodiphenylamine in his polymer. However, he teaches that diamines listed can be alone (see Column 11, line 10), in which case diamine amount is 100%. In addition, Miyama presents 72 Examples of different monomer combinations. Among them only two Examples (i.e. Examples 24 and 48) disclose a mixture of diamines used. In those cases the ratio between them is 1:1 and 4:1, which is within the claimed range of 10-100%.

Note that Miyama does not disclose diaminodiphenylamine in his Examples. However, according to MPEP 2123, disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (see also *In re Susi,* 440 F.2d 442, 169 USPQ 423 (CCPA 1971), *In re Gurley*, 27 F.3d 551, 554, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994) , *In re Fulton*, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004).

Miyama teaches that his polyimide is suitable for preparation of liquid crystal aligning agent using UV polarized light (see Column 3, line 45) to decrease an amount of irregularities formed on the alignment film (see Column 2, line 50).

Therefore, it would have been obvious to a person of ordinary skills in the art at the time of the invention was made that use such monomer as diaminodiphenylamine in range of 10-100% in Sawahara's polyimide precursor allows to prepare liquid crystal aligning agent using UV polarized light, which decreases an amount of irregularities formed on the alignment film.

Regarding Claim 5, 6 and newly presented claims 8-11 Sawahara teaches 10% - 80% of alicyclic tetracarboxylic acid anhydride and aromatic tetracarboxylic acid dianhydride (i.e. pyromellitic, see Column 7, line 50). The advantage of having aromatic dianhydride in the polyimide structure is well known in the art. The addition of aromatics, for instance, among other advantages, increases Young modulus of the film and decreases water uptake.

Therefore, it would have been obvious to a person of ordinary skills in the art at the time of the invention was made to use reasonable amount of aromatic tetracarboxylic acid dianhydride (i.e. 20% mol or more) in order to increase Young modulus of the film and decreases water uptake.

Regarding claims 7 and newly presented claims 12-18, Sawahara teaches that his aligning film is used as a part of a liquid crystal display device (see Column 1, line 5). Hence, all variations of structures, disclosed above are aligning films used in liquid crystal display device.

Response to Arguments

Applicant's arguments filed on 11/20/2007 have been fully considered but they are not persuasive.

Applicant disqualification of Kondo as a prior Art reference is accepted. However, as discussed above, combination of Sawahara and Miyama alone is sufficient to meet the limitations of Claims 1-18.

Applicant states that Miyama and Sawahara do not disclose a liquid crystal aligning agent having the bivalent organic group of formulas (6) or (7) now recited in Claim 1. This is incorrect. As discussed above, Miyama diaminodiphenylamine, which meets formula(6), when p=1.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

GL
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RABON SERGENT
PRIMARY EXAMINER